

State of New Hampshire  
Division of Plant and Property Management  
Bureau of Purchase and Property  
25 Capitol Street, State House Annex  
Concord, New Hampshire 03301-6398

Date: 7/27/2004

Bid No.: 58

Date of Bid Opening: 8/11/2004

Time of Bid Opening: 2:00 pm

PLEASE DIRECT ANY QUESTIONS REGARDING THIS BID TO: Odie Champagne, Purchasing Agent/sf  
TEL. NO: (603) 271-3147 - FAX No. (603) 271-2700

## **BID INVITATION FOR: T-WALL RETAINING WALL SYSTEM (SUPPLY & DELIVER)**

Unless specifically amended or deleted by the Division of Plant and Property Management, the following General Terms and Conditions apply to this Bid and any resulting Purchase Order or Contract.

### **GENERAL CONDITIONS AND INSTRUCTIONS:**

**NATURE OF, AND ELIGIBILITY TO RESPOND.** This bid invitation is submitted in accordance with Chapter 21-1, and rules promulgated thereunder, and constitutes a firm and binding offer. A bid may not be withdrawn unless permission is obtained from the Bureau of Purchase and Property.

Bids may be issued only by the Bureau of Purchase and Property and are not transferable.

**SAMPLES AND DEMONSTRATIONS.** When samples are required they must be submitted free of costs and will not be returned.

Items left for demonstration or evaluation purposes shall be delivered and installed free of charge and shall be removed at no cost to the State. Demonstration units shall not be offered to the State as new equipment.

**Bids.** Bids must be received at the Bureau of Purchase and Property before the date and time specified for the opening. Bids must be submitted on this bid form or exact copies and must be typed or clearly printed in ink. Corrections must be initialed. Bids are to be made less Federal Excise Tax and no charge for handling unless required by law.

Bids will be made available to the public after the time of award. Bid results will be given by mail only if requested in writing and accompanied by a self-addressed, stamped business size envelope.

**SPECIFICATIONS.** Vendors must submit on items as specified. Proposed changes must be submitted in writing and received at the Bureau of Purchase and Property at least five (5) working days prior to the bid opening. Vendors shall be notified in writing if any changes to the specifications are made.

**AWARD.** The award will be made to the responsible Vendor submitting a conforming RFB meeting specifications at the lowest cost unless other criteria are noted in the RFB. Unless otherwise noted, the award may be made by individual items.

If there is a discrepancy between the unit price and the extension, the unit price will prevail.

When identical low bids are received the award will be made in accordance with the Administrative Rules.

Discounts will not be considered in making award but may be offered on the Invoice for earlier payment and will be applicable on the date of completion of delivery or receipt of Invoice, whichever is later. On orders specifying split deliveries, discounts will apply on the basis of each delivery or receipt of Invoice, whichever is later.

**PATENT INFRINGEMENT.** Any responding vendor who has reason to believe that any other responding vendor will violate a patent should such responding vendor be awarded the contract shall set forth in writing, prior to the date and time of opening, the grounds for his belief and a detailed description of the patent.

**ASSIGNMENT PROVISION.** The responding vendor hereby agrees to assign all causes of action that it may acquire under the antitrust laws of New Hampshire and the United States as the result of conspiracies, combinations, or contracts in restraint of trade which materially affect the price of goods or services obtained by the state under this contract if so requested by the State of New Hampshire.

**FEDERAL FUNDS.** This Division of Plant and Property Management, under RSA 21-1:14, VIII shall assure the continuation or granting of federal funds or other assistance not otherwise provided for by law by following the Federal Procurement Standards.

**STATE'S OPTIONS:** The Bureau of Purchase and Property reserves the right to reject or accept all or any part of any bid, to determine what constitutes a conforming bid, to award the bid solely as it deems to be in the best interest of the State, and to waive irregularities that it considers not material to the bid.

**PUBLIC INFORMATION:** The responding vendor hereby acknowledges that all information relating to this bid and any resulting order (including but not limited to fees, contracts, agreements and prices) are subject to these laws of the State of New Hampshire regarding public information.

**PERSONAL LIABILITY:** The responding vendor agrees that in the preparation of this bid or the execution of any resulting contract or order, representatives of the State of New Hampshire shall incur no liability of any kind.

**PROOF OF COMPLIANCE.** The responding vendor may be required to supply proof of compliance with proposal specifications. When requested, the responding vendor must immediately supply the Bureau of Purchase and Property with certified test results or certificates of compliance. Where none are available, the State may require independent laboratory testing. All costs for such testing, certified test results or certificate of compliance shall be the responsibility of the responding vendor.

**FORM OF CONTRACT.** The terms and conditions set forth in any additional Terms and Conditions by the Bureau of Purchase and Property are part of the bid and will apply to any contract awarded the responding vendor unless specific exceptions are taken and accepted and will prevail over any contrary provisions in Terms and Conditions submitted by the responding vendor.

**OFFER.** The undersigned hereby offers to sell to the State of New Hampshire the commodities or services indicated in the following page(s) of this Bid at the price(s) quoted in complete accordance with all conditions of this Bid.

**Company  
Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_  
\_\_\_\_\_

**Tel.:(local)** \_\_\_\_\_ **(Toll free)** \_\_\_\_\_

**Fax#:** \_\_\_\_\_ **(E-mail)** \_\_\_\_\_

**Authorized  
Signature:** \_\_\_\_\_

\_\_\_\_\_  
**(TYPE OR PRINT NAME)**

This document must be signed by a person who is authorized to legally obligate the responding vendor. A signature on this document indicates that all State of New Hampshire terms and conditions are accepted by the responding vendor and that any and all other terms and conditions submitted by the responding vendor are null and void, even if such terms and conditions have terminology to the contrary. The responding vendor shall also be subject to State of New Hampshire terms and conditions as stated on the reverse of the purchase order.

# CONTRACT TERMS AND CONDITIONS

1. The State of New Hampshire, acting through the Division of Plant and Property Management, engages the firm or individual ("the Vendor") to perform the services and/or sale of goods, described in the attached State documents, if any, and the Vendor's bid or quotation, both of which are incorporated herein by reference.

**2. COMPLIANCE BY VENDOR WITH LAWS AND REGULATIONS.** In connection with the performance of this agreement, the Vendor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which shall impose any obligation or duty upon the Vendor, including, but not limited to civil rights and equal opportunity laws.

**3. TERM.** The contract, and all obligations of the parties thereunder, shall become effective on a specified date and shall be completed in their entirety prior to a specified date. Any work undertaken by the Vendor prior to the effective date shall be at his sole risk and, in the event that the contract shall not become effective, the State shall be under no obligation to reimburse the Vendor for any such work.

**4. CONTRACT PRICE.** The contract price, a payment schedule and a maximum limitation of price shall be as specified by the bid invitation and the Vendor's bid. All payments shall be conditioned upon receipt, and approval by the State, of appropriate vouchers and upon satisfactory performance by the Vendor, as determined by the State. The payment by the State of the Contract Price shall constitute complete reimbursement to the Vendor for all expenses of any nature incurred by the Vendor in the performance by the Vendor and complete payment for the Services. The State shall have no other liability to the Vendor.

**5. DELIVERY.** If the vendor fails to furnish items and/or services in accordance with all requirements, including delivery, the state may re-purchase similar items from any other source without competitive bidding, and the original vendor may be liable to the state for any excess costs.

If a vendor is unable to complete delivery by the date specified, he must contact the using agency. However, the agency is not required to accept a delay to the original delivery date. All deliveries are subject to inspection and receiving procedure rules as established by the State of New Hampshire. Deliveries are not considered accepted until compliance with these rules has been established. State personnel signatures on shipping documents shall signify only the receipt of shipments. All deliveries shall be FOB Destination.

**6. INVOICING.** All invoices must be in triplicate showing Order Number, Unit and Extension Prices and discounts allowed. A separate invoice shall be submitted for each order. Unless otherwise noted on the invitation to bid or purchase order, payment will not be due until thirty (30) days after all services have been completed, or all items have been delivered, inspected and accepted or the invoice has been received at the agency business office, whichever is later.

## **7. PERSONNEL.**

**7.1.** The Vendor shall disclose in writing the names of all owners (5% or more), directors, officers, employees, agents or subcontractors who are also officials or employees of the State of New Hampshire. Any change in this information shall be reported in writing within fifteen (15) days of their occurrence.

**7.2.** The person signing this agreement on behalf of the State, or his or her designee ("Contracting Officer") shall be the State's representative for purposes of this agreement. In the event of any dispute concerning the interpretation of this agreement, the Contracting Officer's decision shall be final.

## **8. EVENT OF DEFAULT; REMEDIES.**

**8.1.** Any one or more of the following acts or omissions of the Vendor shall constitute an event of default hereunder ("Events of Default"):

**8.1.1.** failure to deliver the goods or services satisfactorily or on schedule; or

**8.1.2.** failure to submit any report required hereunder; or

**8.1.3.** failure to perform any of the other covenants and conditions of this agreement.

**8.2.** Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:

**8.2.1.** give the Vendor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this agreement, effective two (2) days after giving the Vendor notice of termination; and

**8.2.2.** give the Vendor a written notice specifying the Event of Default and suspending all payments to be made under this agreement and ordering that the portion of the Contract Price, which would otherwise accrue to the Vendor during the period from the date of such notice until such time as the State determines that the Vendor has cured the Event of Default, shall never be paid to the Vendor; and

**8.2.3.** set off against any other obligation the State may owe to the Vendor any damages the State suffers by reason of any Event of Default; and

**8.2.4.** treat the agreement as breached and pursue any of its remedies at law or in equity, or both.

**9. WAIVER OF BREACH.** No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event, or any subsequent Event. No express failure of any Event of Default shall be deemed a waiver of any provision hereof. No such failure or waiver shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other default on the part of the Vendor.

**10. VENDOR'S RELATION TO THE STATE.** In the performance of this agreement the Vendor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Vendor nor any of its officers, employees, agents or members shall have authority to bind the State nor are they entitled to any of the benefits, workmen's compensation or emoluments provided by the State to its employees.

**11. ASSIGNMENT AND SUBCONTRACTS.** The Vendor shall not assign, or otherwise transfer any interest in this agreement without the prior written consent of the State. No work required by this contract shall be subcontracted without the prior written consent of the State.

**12. INDEMNIFICATION.** The contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based on, resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Vendor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant shall survive the termination of this agreement.

**12.1 PATENT PROTECTION.** The seller agrees to indemnify and defend the State of New Hampshire from all claims and losses resulting from alleged and actual patent infringements and further agrees to hold the State of New Hampshire harmless from any liability arising under RSA 382-A:2-312(3). (Uniform Commercial Code).

**13. TOXIC SUBSTANCES.** In compliance with RSA 277-A known as the Workers Right to Know Act, the vendor shall provide Material Safety Data Sheets with the delivery of any and all products covered by said law.

**14. NOTICE.** Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given below.

**15. AMENDMENT.** This agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto.

**16. CONSTRUCTION OF AGREEMENT AND TERMS.** This agreement shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns.

**17. ADDITIONAL PROVISIONS.** The additional provisions (if any) have been set forth as Exhibit "A" hereto.

**18. ENTIRE AGREEMENT.** This agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire agreement and understanding between the parties, and supersedes all prior agreements and understandings relating hereto.

## BID INVITATION FOR: T-WALL RETAINING WALL SYSTEM, SUPPLY AND DELIVER

### PURPOSE:

The purpose of this bid invitation is to establish a contract in the form of a purchase order for supplying the State of New Hampshire Department of Transportation with T-Wall Retaining Wall System, in accordance with the requirements of this bid invitation and any resulting order. These item(s) shall be a one time order with delivery required to the location/s indicated in the F.O.B. section of this bid invitation .

### SPECIFICATION COMPLIANCE:

Bidder's offer must meet the required specifications as written.

### VENDOR CERTIFICATIONS:

All bidders must be duly registered as a vendor authorized to conduct business in the State of New Hampshire.

### STATE OF NEW HAMPSHIRE VENDOR APPLICATION:

Bidders must have a completed Vendor Application and W-9 Form must be on file with the NH Bureau of Purchase and Property. See the following website for information on obtaining and filing the required forms (no fee).

<http://www.admin.state.nh.us/purchasing/>

### NEW HAMPSHIRE SECRETARY OF STATE REGISTRATION:

A person or persons conducting business under any name other than his/her own legal name must register with the NH Secretary of State. Businesses are classified as "Domestic" (in-state) or "Foreign" (out-of-state). Please visit the following website to find out more about the requirements and filing fees for both classifications:

<http://www.nh.gov/sos/corporate/>

### BID PRICES:

Bid prices shall include delivery and all other costs. Bid prices should be government and/or educationally discounted prices.

### F.O.B.:

The F.O.B. shall be destination to the following delivery point:

New Hampshire Department of Transportation  
Bridge Maintenance  
Concord Stage Road (Rt 77)  
Weare, NH 03281

REQUISITION NO.: 199633

### OFFER:

Successful bidder hereby offers to sell the required items to the State of New Hampshire at the following price(s):

**The unit prices and extensions indicated by you should be government and/or educationally discounted prices.**

<u>QTY</u>	<u>UNIT</u>	<u>DESCRIPTION</u>	<u>DELIVERED PRICES</u>	
			<u>UNIT</u>	<u>EXTENSION</u>
780 +/-	SF	T-Wall Retaining Wall Components	\$_____	\$_____

**Specifications and Drawings attached  
To Be Awarded in Total**

## TESTING AND INSPECTION

Acceptability of the concrete for the precast units will be determined on the basis of compression tests, certifications and visual inspection. The concrete strength requirements for the precast units shall be considered satisfied regardless of curing age when compression test results indicate that the concrete strength will conform to 28 day specifications. (See Section 1.1 for material compressive strength). The Supplier shall furnish facilities and perform all necessary sampling and testing in an expeditious and satisfactory manner. Units utilizing Type I or II cement shall be considered acceptable for placement in the wall when 7 day initial strengths exceed 85 percent of 28 day requirement. Results of the test cylinders shall be sent to:

New Hampshire Department of Transportation, Bridge Maintenance  
P.O. Box 483  
Concord, NH 03302  
Attn: Kyle Fox

### **Special Notation:**

Upon completion of fabrication, the successful bidder may submit an invoice to New Hampshire Department of Transportation to cover material costs, not to exceed 80% of total bid price, prior to delivery of the units.

### **DELIVERY TIME:**

Successful bidder hereby agrees to accomplish delivery of any item awarded to him within \_\_\_\_\_ days after receipt of the order.

### **BID RESULTS:**

Bid results will not be given over the telephone. Bid results will be mailed to you if you include a self addressed envelope with the correct amount of postage on it. Bid results may also be viewed on our web site at:

<http://admin.state.nh.us/purchasing/bids.asp>

**NOTE: BID MUST BE SIGNED ON FRONT COVER SHEET TO BE CONSIDERED.**

## **T-Wall Components**

### **Weare – Concord Stage Road (Route 77), - Project #14138**

#### **T-WALL® Retaining Wall System**

##### **1.0 Materials**

The T-WALL precast reinforced concrete units and joint materials shall be from a Licensee of The Neel Company, 8328-D Traford Lane, Springfield, Virginia 22152, (703-913-7858).

##### **1.1 Reinforced Concrete Units**

The material used in concrete for the precast units shall have a compressive strength of 4,000 psi at 28 days.

##### **1.1.1 Precast Coping Units**

NHDOT Bridge Maintenance will supply the guardrail anchor assemblies to the successful bidder. The anchor assemblies are to be cast into the copings by the successful bidder. See T-Wall plans and NHDOT Bridge Maintenance detail sheet for location of anchor assemblies.

##### **1.1.2 Testing and Inspection**

Acceptability of the concrete for the precast units will be determined on the basis of compression tests, certifications and visual inspection. The concrete strength requirements for the precast units shall be considered satisfied regardless of curing age when compression test results indicate that the concrete strength will conform to 28-day specifications. The Supplier shall furnish facilities and perform all necessary sampling and testing in an expeditious and satisfactory manner. Units utilizing Type I or II cement shall be considered acceptable for placement in the wall when 7-day initial strengths exceed 85 percent of 28-day requirement. Results of the test cylinders shall be sent to:

NHDOT Bridge Maintenance  
ATTN: Kyle Fox  
P.O. Box 483  
Concord, NH 03302

##### **1.1.3 Casting**

The units shall be cast in steel forms with dimensional tolerances that will assure the production of uniform units.

##### **1.1.4 Curing**

The reinforced concrete units shall be cured for a sufficient length of time so that the concrete will develop the specified compressive strength.

##### **1.1.5 Removal of Forms**

The forms shall remain in place until they can be removed without damage to the unit.

## **T-Wall Components**

### **Weare – Concord Stage Road (Route 77), - Project #14138**

#### **1.1.6 Concrete Finish and Tolerances**

##### **Steel Form Finish**

- a. Unit Tolerances - all dimensions shall be within  $\pm 1/4$ -inch.
- b. Surface Finish - all honeycomb or open texture shall be properly repaired.

##### **Form Liner Finish - Front Face**

- a. Front Face Tolerance - length and height of front face shall be within  $\pm 3/8$  inch.
- b. Front Face Surface Finish - all honeycomb shall be properly repaired.

#### **1.1.7 Handling, Storage and Shipping**

All units shall be handled, stored, and shipped in such a manner as to avoid chipping, cracking, fracturing and excessive bending stresses.

#### **1.1.8 Reinforcing Steel**

The reinforcing steel shall satisfy all applicable requirements of ASTM A 615 grade 60. The minimum concrete cover for the reinforcing steel shall be 2 inches.

#### **1.2 Joint Materials**

##### **a. Horizontal Joints**

Expansion joint filler, conforming to ASTM D 1751, or equal.

##### **b. Vertical Joints**

A 12-inch width of filter cloth such as Mirafi 160 N or approved equal shall be placed on the back face to cover the vertical joints.

#### **1.3 Finish**

The panels shall be concrete gray in color with smooth steel form finish.

#### **2.0 Payment Items**

2.1 Payment will be by the square foot of surface area of the T-WALL units only. This price will include all precast concrete T-Wall units, precast coping, shear keys, joint material, T-Wall unit lifting device for the duration of the project, and on-site technical assistance.

2.2 The square foot price shall include delivery of all T-Wall materials to the work site.

2.3 Upon completion of fabrication, the successful bidder may submit an invoice to NHDOT to cover material costs, not to exceed 80% of total bid price, prior to delivery of the units.



WEARE ROAD - ROUTE 77  
WEARE, NH

T-WALL®

RETAINING WALL SYSTEM

DESIGNER



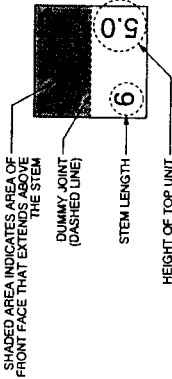
THE NEEL COMPANY  
8328-D TRAFORD LANE  
SPRINGFIELD, VIRGINIA 22152  
PH: (703) 913-7858  
FX: (703) 913-7859  
WEB: WWW.NEELCO.COM

PRECASTER

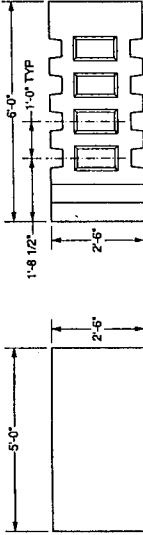
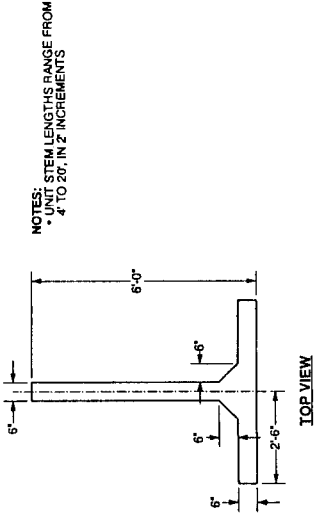
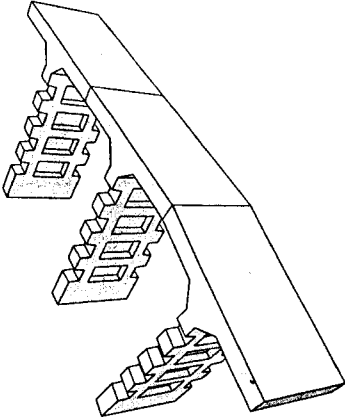
INDEX OF DRAWINGS

SHEET	TITLE	REV #	DATE
1 OF 8	COVER SHEET		
2 OF 8	TYPICAL DETAILS		
3 OF 8	PLAN, ELEVATION, & SECTION		
4 OF 8	COPING AND GUARD RAIL ELEVATION		
5 OF 8	COPING AND GRAVITY SLAB DETAILS		
6 OF 8	COPING AND GRAVITY SLAB REINFORCING		
7 OF 8	REBAR - STANDARD UNITS		
8 OF 8	REBAR - SPECIAL TOP UNITS		

LEGEND



TYPICAL PANEL NOTATION  
NO SCALE



FRONT VIEW

SIDE VIEW

TYPICAL 6' STEM T-WALL UNIT

The design contained on these drawings is based upon information provided by the owner. On the basis of this information, The Neel Company has designed, and is responsible for, the internal stability of the structure only. External stability, including foundation and slope stability, is the responsibility of the owner.

The drawing contains information proprietary to The Neel Company. The Neel Company disclaims any liability for the use of the T-WALL® patent. © 2004 The Neel Company

PRECASTER:  
PROJECT #:

CONTRACTOR: NEW HAMPSHIRE DOT  
PROJECT #: 14138

DESIGNER

THE NEEL COMPANY  
8328-D TRAFORD LANE  
SPRINGFIELD, VIRGINIA 22152  
PH: (703) 913-7858  
FX: (703) 913-7859  
WEB: WWW.NEELCO.COM

PROJECT #: TW 2650

CERTIFIED WITH RESPECT  
TO INTERNAL STABILITY OF  
T-WALL STRUCTURES ONLY.

REVISIONS

WEARE ROAD - ROUTE 77  
WEARE, NH

SHOP DRAWINGS  
COVER SHEET

T-WALL® RETAINING WALL SYSTEM

SCALE	N/A
DATE	7/15/04
DESIGNED BY:	NAS
DRAWN BY:	NAS
CHECKED BY:	KD
SHEET:	1 OF 8

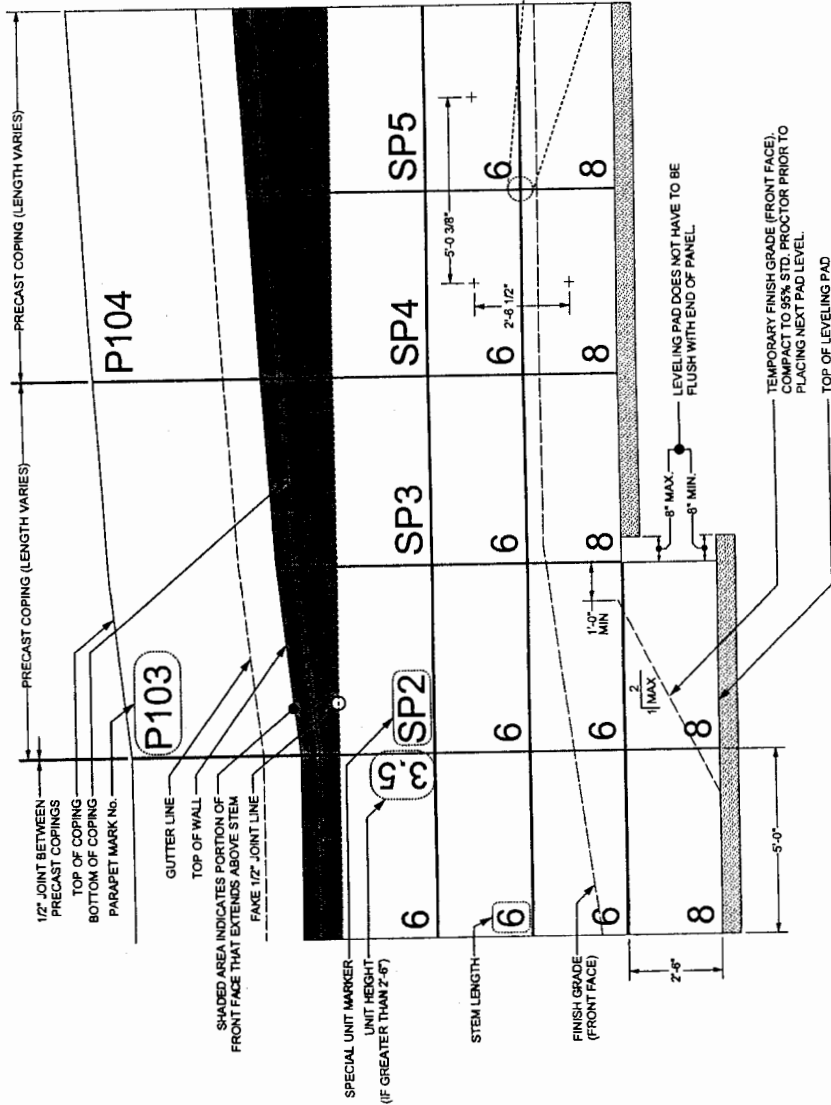


SHEAR KEY NOTES:

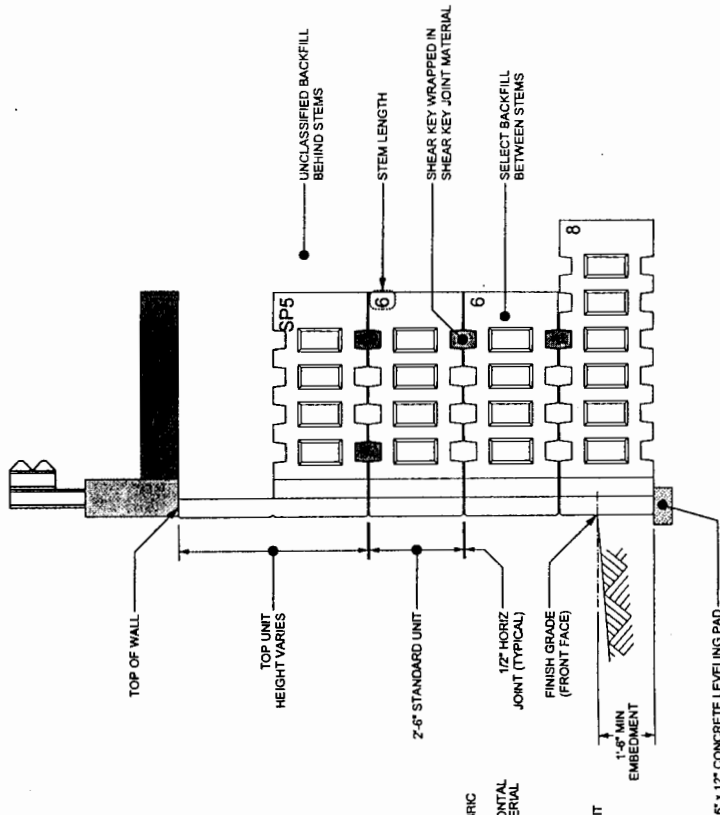
1. ALL EXTENDED FACE TOP UNITS REQUIRE A MINIMUM OF 2 SHEAR KEYS. SHEAR KEYS SHALL BE 1/2" DEEP, 1/2" WIDE, AND 1/2" LONG (OR FRACTION THEREOF, WHICHEVER IS GREATER).
2. ALL OTHER UNITS REQUIRE 1 SHEAR KEY FOR EVERY 6 OF STEM LENGTH (OR FRACTION THEREOF).

ALL TOP UNITS 2 (MIN)

- 4' STEM 1  
6' STEM 1  
8' STEM 2  
10' STEM 2  
12' STEM 2  
14' STEM 3  
16' STEM 3  
18' STEM 3  
20' STEM 4  
22' STEM 4  
24' STEM 5  
26' STEM 5  
28' STEM 5  
30' STEM 5



PARTIAL ELEVATION SHOWING - TYPICAL DETAILS  
NOT ALL DETAILS APPLY. SEE SPECIFIC WALL ELEVATIONS



TYPICAL SECTION SHOWN  
NOT ALL DETAILS APPLY. SEE SPECIFIC WALL SECTIONS

The design contained on these drawings is based upon information furnished by the owner. On the basis of this information, The Neel Company has designed, and is responsible for, the internal stability of the structure only. External stability, including foundation and slope stability, is the responsibility of the owner.

This drawing contains information proprietary to The Neel Company. The Neel Company does not warrant the accuracy or completeness of the T-WALL patent.  
© 2004 The Neel Company

PRECASTER:  
PROJECT #:  
CONTRACTOR: NEW HAMPSHIRE DOT  
PROJECT #: 14138



DESIGNER

THE NEEL COMPANY  
8325-O TRAFORD LANE  
SPRINGFIELD, VIRGINIA 22152  
TEL: (703) 513-7899  
FAX: (703) 513-7899  
WEB: WWW.NEELCO.COM  
PROJECT #: TW2650

CERTIFIED WITH RESPECT  
TO INTERNAL STABILITY OF  
T-WALL® STRUCTURES ONLY

REVISIONS

WEARE ROAD - ROUTE 77  
WEARE, NH

SHOP DRAWING  
TYPICAL T-WALL DETAIL

T-WALL® RETAINING WALL SYSTEM

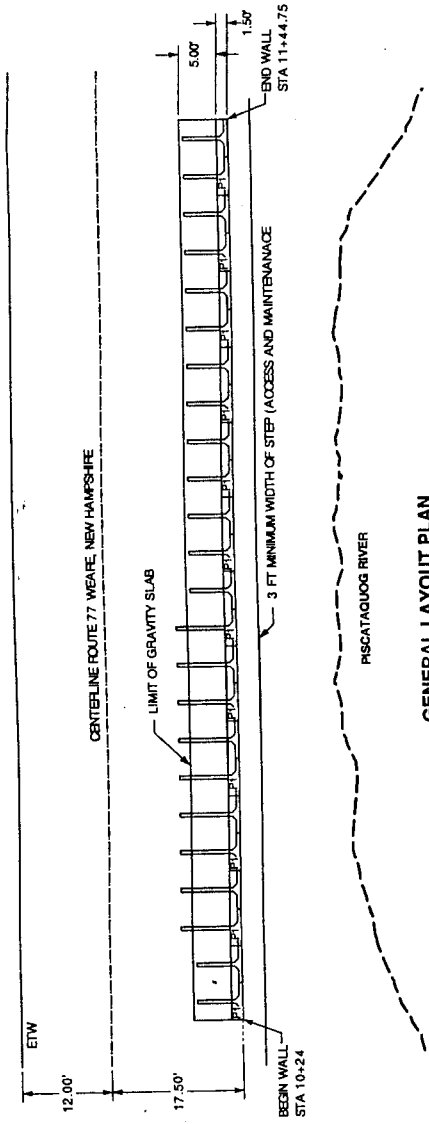
SCALE:	N/A
DATE:	7/15/2004
DESIGNED BY:	NAS
DRAWN BY:	NAS
CHECKED BY:	KD
SHEET:	2 OF 6

SPECIAL NOTES:

- THESE DRAWINGS WERE PREPARED BASED ON INFORMATION RECEIVED FROM THE FOLLOWING:
  - PLAN AND CROSS SECTION RECEIVED FROM NHDOT ON APRIL 30TH 2004.
  - TEST BORING REPORT RECEIVED FROM NHDOT ON APRIL 30TH 2004.
- APPLIED BEARING PRESSURE AT MAXIMUM HEIGHT:
  - 2100 psf
- THE FOLLOWING ASSUMPTIONS WERE MADE:
  - THE FOUNDATION SOILS ARE CAPABLE OF DEVELOPING SUFFICIENT BEARING CAPACITY TO SUPPORT THE WALL LOADS WITH AN ACCEPTABLE FACTOR OF SAFETY.
- T-WALL FACE FORM FINISH:
  - PLAN CONCRETE FINISH

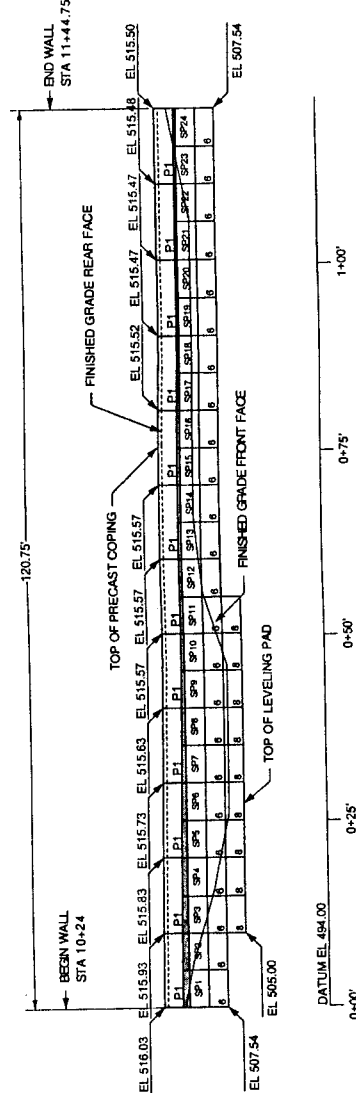
GENERAL NOTES:

- SELECT BACKFILL BETWEEN STEMS:
  - ANGLE OF INTERNAL FRICTION - 34° (MIN)
  - DENSITY - 120 pcf (MIN)
  - 15% MAXIMUM PASSING #200 SIEVE
  - 100% PASSING #4 SIEVE
  - 95% STANDARD COMPACTION (ASTM D-698)
- UNCLASSIFIED BACKFILL BEHIND STEMS:
  - ANGLE OF INTERNAL FRICTION - 30°
  - DENSITY - 120 pcf (MIN)
  - 95% STANDARD COMPACTION (ASTM D-698)
- HORIZONTAL JOINT:
  - 1/2" FIBER EXPANSION JOINT MATERIAL
- VERTICAL JOINT:
  - 3/8" SPACE
- CONCRETE LEVELING PAD:
  - 6" x 12"
  - 2500 PSI CONCRETE
  - NO REBAR
  - GRADE TOLERANCE - 1/4" IN 10'
- CONSTRUCTION:
  - SEE T-WALL® CONSTRUCTION MANUAL
- FOUNDATION:
  - UNSUITABLE MATERIALS REMOVED AND REPLACED WITH COMPACTED SELECT FILL
- T-WALL UNIT REBAR:
  - GRADE 60 BLACK STEEL BARS

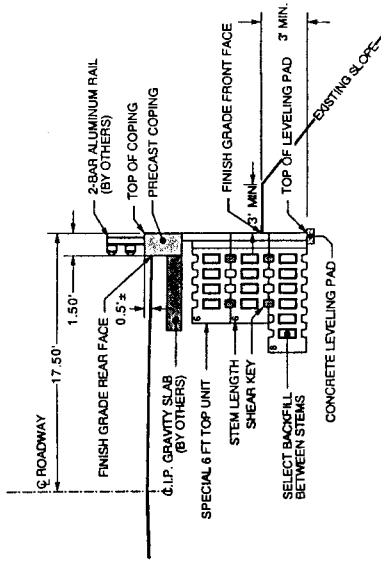


GENERAL LAYOUT PLAN

PANEL TYPE	QNTY (sq)	AREA (sq)	SELECT FILL (cy)
2.5 x 5.0 x 08 S60	24	300.00	54
2.5 x 5.0 x 08 S60	9	112.50	28
2.5 x 5.0 x 08 S60	24	307.34	83
Specimen Unitals	57	719.84	165
NOTE: Select backfill quantities are between stems only.			



DEVELOPED ELEVATION (FRONT FACE)



TYPICAL SECTION AT MAXIMUM HEIGHT  
SCALE: 1" = 5'

SCALE:	1" = 10'
DATE:	7/15/2004
DESIGNED BY:	NAS
DRAWN BY:	NAS
CHECKED BY:	KD
SHEET:	3 OF 8

WEARE ROAD, ROUTE 77  
WEARE, NH

SHOP DRAWINGS  
GENERAL ARRANGEMENT  
WALL PLAN, ELEVATION AND SECTION  
T-WALL® RETAINING WALL SYSTEM

REVISIONS

CERTIFIED WITH RESPECT TO THE T-WALL® STRUCTURES ONLY

DESIGNER

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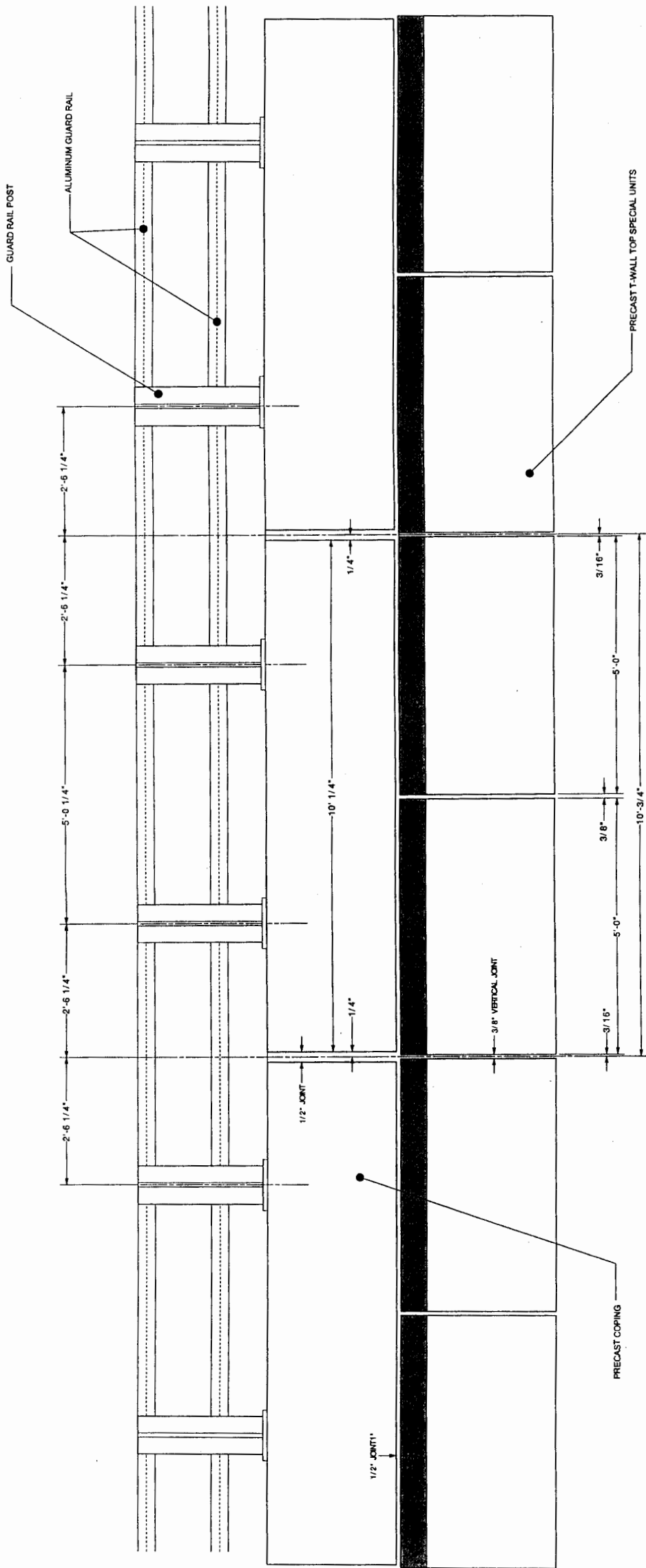
PROJECT #: TW 2650

PRECASTER:  
PROJECT #:

CONTRACTOR: NEW HAMPSHIRE DOT  
PROJECT #: 14138

This design contained on these drawings is based upon information provided by the owner. On the basis of this information, The Neel Company is not responsible for the internal stability of the structure only. External stability, including foundation and slope stability, is the responsibility of the owner.

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COPING AND GUARD RAIL ELEVATION (WALL FACE)  
NOT TO SCALE

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PRECASTER:  
PROJECT #:  
CONTRACTOR: NEW HAMPSHIRE DOT  
PROJECT #: 14138



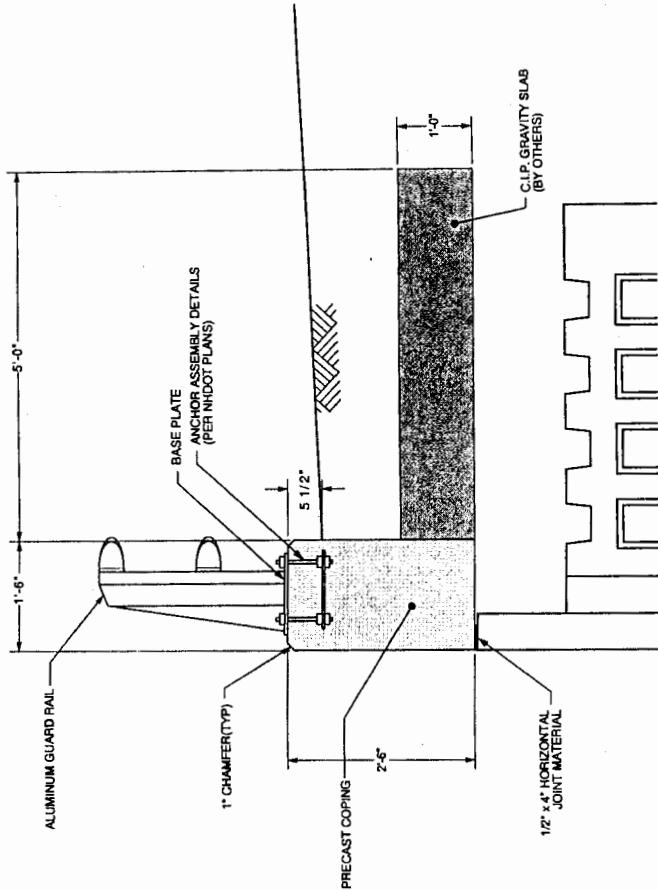
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PROJ #: TW2650

CERTIFIED WITH RESPECT  
TO INTERNAL STABILITY OF  
T-WALL STRUCTURES ONLY

REVISIONS

WEAVER ROAD, ROUTE 77  
WEAVER, NH  
SHOP DRAWING  
COPING AND GUARD RAIL ELEVATION  
T-WALL® RETAINING WALL SYSTEM

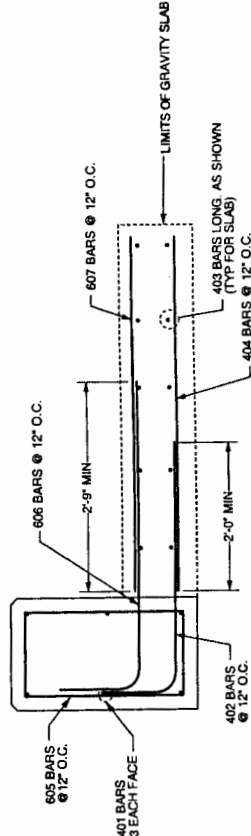
SCALE:	1" = 1'
DATE:	7/15/04
DESIGNED BY:	BZY
DRAWN BY:	BZY
CHECKED BY:	MD
SHEET:	4 OF 8



PRECAST COPING - DIMENSIONS

NOTE

- REINFORCEMENT IN THE COPING SHALL BE BLACK STEEL.
- ANCHOR ASSEMBLY & BASE PLATE WILL BE PROVIDED BY NHDOT.



PRECAST COPING - REBAR

The design contained on these drawings is based upon information provided by the Contractor. The Neel Company has designed, and is responsible for, the internal stability of the retaining wall. The Contractor is responsible for the foundation and slope stability of the wall.

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PRECASTER:  
PROJECT #:

CONTRACTOR: NEW HAMPSHIRE DOT  
PROJECT # 14138



DESIGNER

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PROJ # TW2650

DESIGNED BY: BZY

CHECKED BY: KD

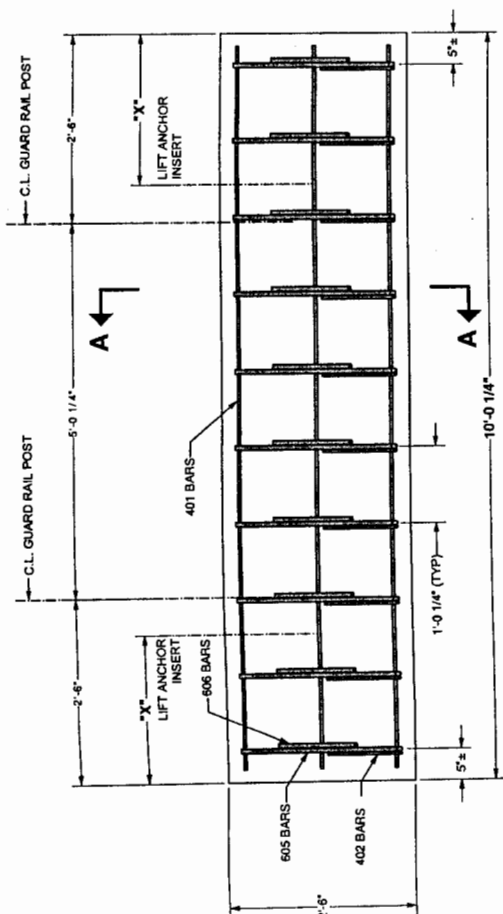
DATE: 7/15/04

SCALE: 1" = 1'

WEARE ROAD, ROUTE 77  
WEARE, NH

SHOP DRAWINGS  
COPING AND GRAVITY SLAB DETAILS

T-WALL® RETAINING WALL SYSTEM



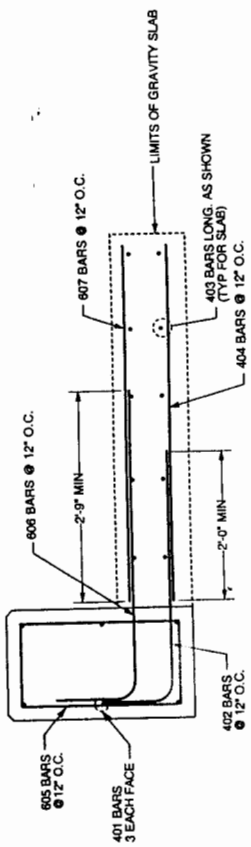
ELEVATION (WALL FACE)

- SPECIAL NOTES:**
1. ARCHITECTURAL FINISH:  
-PLAIN FORM FINISH AT WALL FACE
  2. CONCRETE  
-4000psi AT 28 DAYS
  3. REINFORCING STEEL:  
-ASTM A615M (GRADE 60) REBAR - 60ksi (F<sub>y</sub>)  
-BLACK STEEL
  4. REBAR IN GRAVITY SLAB SUPPLIED BY NHDOT
  5. HOLES FROM ERECTION ANCHORS SHALL BE FILLED WITH NON-SHRINK CEMENT GROUT TO MATCH THE COLOR OF THE CONCRETE PARAPET AFTER THE INSTALLATION IS COMPLETE. (GROUT TO BE SUPPLIED BY NHDOT)
  6. CONTRACTOR TO VERIFY QUANTITIES, DETAILS AND HANDLING PRIOR TO FABRICATION.
- NOTES:**
1. MINIMUM CONCRETE COVER FOR ALL REBAR TO BE 2".
  2. MINIMUM CONCRETE COVER FOR ALL REBAR TO BE 2".

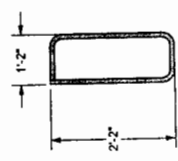
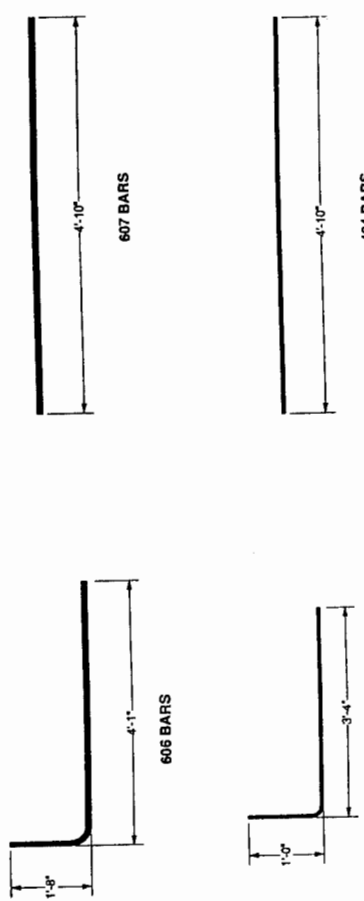
REBAR SCHEDULE

MARK NO.	BAR SIZE	QUANTITY	LENGTH	COMMENTS
401	#4	6 ea	98 1/4"	
402	#4	10 ea	4'4"	
403	#4	12 ea	98 1/4"	
404	#4	10 ea	4'10"	
605	#6	10 ea	6'8"	
606	#6	10 ea	5'3"	
607	#6	10 ea	4'10"	

PRECAST COPING DETAILS				
Mark No.	Qty	Length	HEIGHT	WEIGHT
P1	12	10'0 1/4"	2'6"	1,392 w/3
				5,637 lb



SECTION A-A



605 BARS

SCALE	1" = 1'
DATE	7/15/04
DESIGNED BY	BZY
DRAWN BY	BZY
CHECKED BY	KD
SHEET	6 OF 8

**WEARE ROAD, ROUTE 77**  
**WEARE, NH**

SHOP DRAWINGS  
COPING AND GRAVITY SLAB REINFORCING

T-WALL® RETAINING WALL SYSTEM

REVISIONS

CERTIFIED WITH RESPECT TO THE ACCURACY OF THE INFORMATION CONTAINED HEREIN FOR T-WALLS & STRUCTURES ONLY

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PROJECT #: TW2650

**PRECASTER:**  
PROJECT #:

**CONTRACTOR:** NEW HAMPSHIRE DOT  
PROJECT #: 14138

The design contained on these drawings is based upon information provided by the owner. On the basis of this information, The Neel Company has designed and fabricated the retaining wall system and its stability is the responsibility of the owner.

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PRECASTER:  
PROJECT #:

CONTRACTOR: NEW HAMPSHIRE DOT  
PROJECT #: 14139



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PROJECT #: TW2650

CERTIFIED WITH RESPECT  
TO INTERNAL STABILITY OF  
T-WALL STRUCTURES ONLY

REVISIONS

WEAVER ROAD - ROUTE 77  
WEAVER, NH

2.5 x 5.0 T-WALL® STANDARD UNITS  
REBAR - STANDARD UNITS

T-WALL® RETAINING WALL SYSTEM

SCALE	1" = 1'
DATE	07/15/04
DESIGNED BY	JMC
DRAWN BY	KD
CHECKED BY	TCN
SHEET	7 OF 8

REBAR SCHEDULE - 2.5 x 5.0 x 6.0 STANDARD UNIT					
Unit Dim's	Bar Mark	Qty	Size	Length	Remarks
H = 26"	H-1	3 ea	#4	48"	
W = 50"	V-1	10 ea	#3	22"	
S = 60"	V-2	6 ea	#3	22"	
SH = 26"	TB-1	4 ea	#3	33"	
	TB-1	4 ea	#4	78"	5/8 1/2"

REBAR SCHEDULE - 2.5 x 5.0 x 8.0 STANDARD UNIT					
Unit Dim's	Bar Mark	Qty	Size	Length	Remarks
H = 26"	H-1	3 ea	#4	48"	
W = 50"	V-1	14 ea	#3	22"	
S = 60"	V-2	6 ea	#3	22"	
SH = 26"	S-1	4 ea	#3	33"	
	TB-1	4 ea	#4	89"	7/8 1/2"

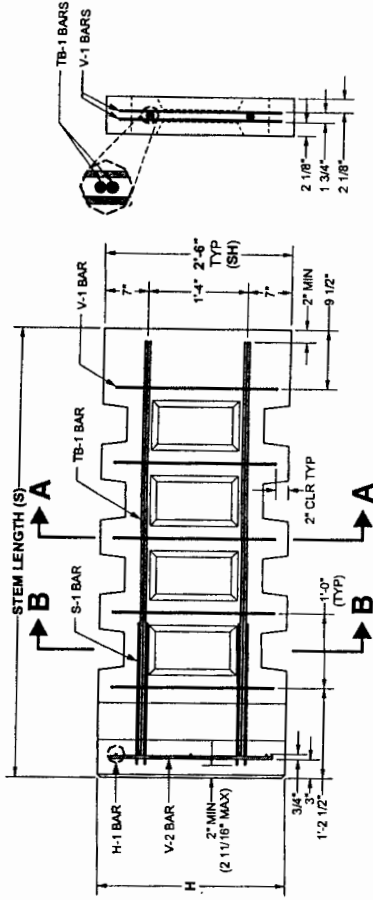
UNIT TYPE	H	W	S	SH	VOL	WEIGHT
2.5 x 5.0 x 6.0 STD	26"	50"	60"	26"	0.48 CY	1,938 lbs
2.5 x 5.0 x 8.0 STD	26"	50"	80"	26"	0.56 CY	2,250 lbs

SPECIAL NOTES:

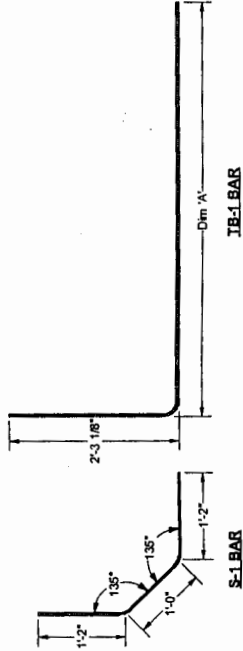
- FRONT FACE OF T-WALL UNITS FINISH TREATMENT:
  - SMOOTH STEEL FORM FINISH (TYPICAL)
  - A VARIETY OF ARCHITECTURAL FINISHES ARE AVAILABLE.

GENERAL NOTES:

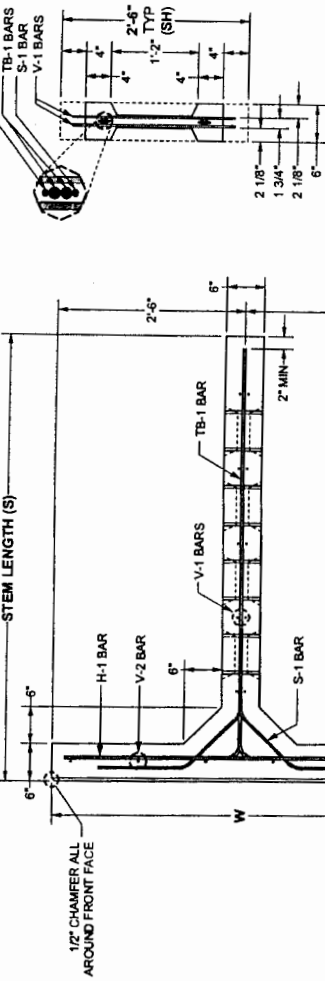
- PRIMARY REFERENCE: AASHTO, STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 16th EDITION 1996 (WITH INTERIMS)
- MINIMUM CONCRETE COVER IS DESIGNED FOR 2" ON ALL BARS.
- CONCRETE:
  - $f_c = 4000 \text{ psi}$  @ 28 DAYS
- REBAR:
  - BLACK COATED REBAR, EPOXY COATED REBAR 777
  - $F_y = 60 \text{ ksi}$  (GRADE 60)



FRONT VIEW  
(V-1 BARS IN STEM OMITTED FOR CLARITY)

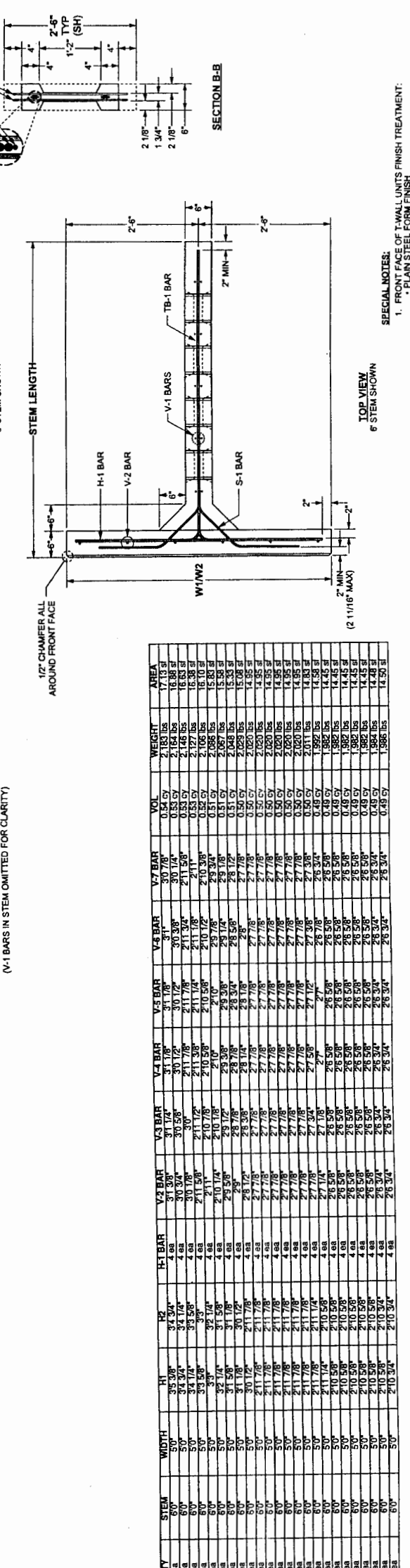
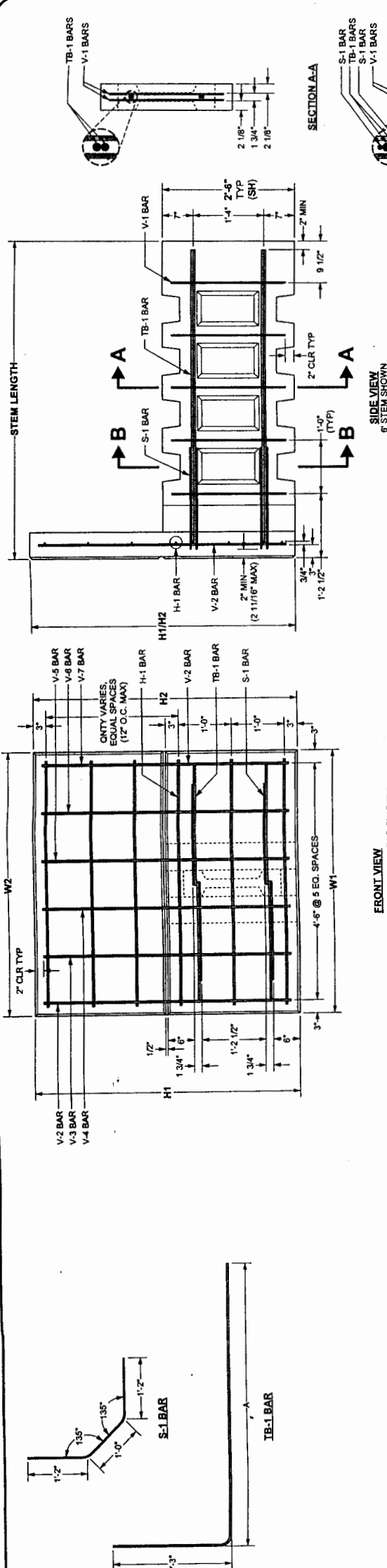


SECTION A-A  
SIDE VIEW  
6" STEM SHOWN



TOP VIEW  
6" STEM SHOWN

SECTION B-B



REBAR SCHEDULE - 6' SPECIAL UNITS (SP1 THRU SP24)									
Unit Dim's	Bar Mark	Qty	Size	Dim A'	Length	Remarks	Dim A'	Length	Remarks
H = 36"	H-1	4 ea	#4	48"	22'	SEE MARK NO. SCHEDULE			
W = 50"	V-1	10 ea	#3			SEE MARK NO. SCHEDULE			
S = 60"	V-2 TO V-7	1 ea	#5			SEE MARK NO. SCHEDULE			
	S-1	4 ea	#3		33'				
	TB-1	4 ea	#4		76 1/2'				

WEARE ROAD - RPOUTE 77  
WEARE, NH

SHOP DRAWINGS  
REBAR - SPECIAL UNITS TOP  
T-WALL@ RETAINING WALL SYSTEM

SCALE: 1" = 1'  
DATE: 07/15/04  
DESIGNED BY: JMC  
DRAWN BY: KD  
CHECKED BY: TON  
SHEET: 8 OF 9

DESIGNER  
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PROJECT #: TW2650

PRECASTER:  
PROJECT #:

CONTRACTOR: NEW HAMPSHIRE DOT  
PROJECT #: 14130

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